

Electrochemical Reactor for Producing Oxygen From Carbon Dioxide, Phase II

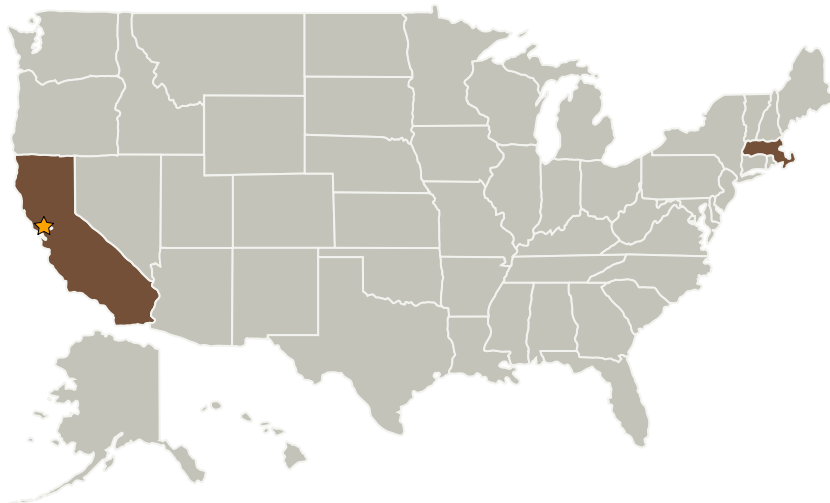
Completed Technology Project (2006 - 2008)



Project Introduction

An electrochemical reactor is proposed by MicroCell Technologies, LLC to electrochemically reduce carbon dioxide to oxygen. In support of NASA's advanced life support processes and human exploration missions, recovering oxygen from carbon dioxide is important since oxygen resupply is not a viable option. During a Phase I program, we demonstrated a process that uses a low temperature molten salt to selectively adsorb carbon dioxide and reduce it to separated streams of oxygen and carbon monoxide. This carbon dioxide removal and oxygen generator may be used by NASA to provide oxygen for cabin crew life support or for propellant generation on the moon or Mars as a part of the In Situ Resource Utilization (ISRU) process. During the Phase II project, we will develop this technology into a compact and lightweight reactor to efficiently produce oxygen from carbon dioxide.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
Reactive Innovations, LLC	Supporting Organization	Industry	Westford, Massachusetts



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations

California

Massachusetts

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
 - └ TX06.1 Environmental Control & Life Support Systems (ECLSS) and Habitation Systems
 - └ TX06.1.1 Atmosphere Revitalization